

Begin

Reel # 444
Povod, A.G.

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22752
S/125/61/300/007/008/013
2040/2113

AUTHORS:

Medovar, B.I.; Nazarenko, G.K.; Gurevich, S.M.; Chekotilo, L.V.; Pavod, A.G.; and Pinchuk, N.I.

TITLE:

Some peculiarities of electron-beam welding of austenitic steels and alloys

PERIODICAL:

Avtomaticheskaya svarka, no. 7, 1961, 79-81

TEXT: In their introductory remarks, the authors state why the electron-beam welding of austenitic steels and alloys in a vacuum is superior to conventional welding. For experimental purposes, specimens of 3M 726 (EI 726) and 3M 696 (EI 696) heat-resistant austenitic steels and a nimonic-type 3M 4375 (EI 4375) alloy were welded by the electron-beam method. All these types contain boron and are prone to cracks in the area near the weld and in the weld metal, if the composition of the base metal is reproduced. Welding was carried out with an electron-beam gun designed by the Ordena Trudovogo Krasnogo Znameni Institut elektrosvarki im. Ye.O. Patona AN USSR (Electric Welding Institute "Order of the Red Banner of Labor" im. Ye.O. Paton AS UkrSSR) using 120 mA, 20 kW current and a 35 m/hr welding speed. Metal

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Some peculiarities of electron-beam ...

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produced by the electron beam was completely sound, except in the case of EI726 steel where an increased boron content of 0.025% caused cracks to form in the base metal at the seam and sometimes even in the weld metal. The following conclusions are drawn: The new method of electron-beam welding in a vacuum must be used not only for refractory and chemically active metals but also for heat-resistant austenitic steels and alloys. The electron-beam method gives welds much more resistance to crystallization cracks than other known welding methods. It is to be expected that the use of filler wire will make the electron-beam process applicable to a wider range of austenitic steels and alloys, and that the dagger shape of the seam will necessitate some modification of the design of the joints. There are 6 figures. X

ASSOCIATION: Ordona Trudovogo Krasnogo Znameni Institut elektrosvarki im. Ye. O. Patona AN USSR (Electric Welding Institute "Order of the Red Banner of Labor" im. Ye. O. Paton AS UkrSSR)

SUBMITTED: April 17, 1961

Card 2/2

NAZARENKO, O.K.; POVOD, A.G.; SHNYAKIN, N.S. (Moskva); ARTAMONOV, N.N. (Moskva);
PANOV, Yu.P. (Moskva); KEDMAN, A.B. (Moskva)

Instruments and equipment for electron beam welding of large-size
articles. Avtom. svar. 17 no.3:44-49 Mr '64. (MIRA 17:11)

1. Institut elektrosvariki im. Ye.O. Patona AN UkrSSR (for Nazarenko,
Povod).

L 14264-63

EWP(k)/EWP(q)/EWT(m)/BDS

AFTC/ASD

PF-1

JD/HM

ACCESSION NR: AP3004559

S/0125/63/000/008/0090/0091

AUTHOR: Povod, A. G.

TITLE: On metal mixing in electron-beam welding with a narrow penetration pattern

58

SOURCE: Avtomaticheskaya svarka, no. 8, 1963, 90-91

TOPIC TAGS: electron-beam welding, narrow penetration pattern, weld-metal mixing, electron-beam stirring action, electron-beam pressure

ABSTRACT: A stainless steel plate with copper probes 2.5 mm in diameter, a carbon steel plate with titanium probes 2 mm in diameter, and a copper plate with aluminum probes were used to study the metal transfer phenomena within the penetration zone during electron-beam welding with accelerating voltage of 22 kv, beam current of 200-250 mamp, and speed of 30 m/hr. The probes were inserted at various depths from the plate surface perpendicular to the beam. It was found that in the lower portion of the weld, the probe metal moves either straight up or somewhat in the direction of the beam motion. In the upper section, usually 2-3 mm thick, the probe metal always moves in the direction of the beam motion.

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L 14264-63

ACCESSION NR: AP3004559

The horizontal distance the probe metal travels is determined by the volume of molten metal near the surface, that is, by λT_m , where λ is the coefficient of heat conductivity and T_m the melting temperature of the base metal. Thus, in copper, where the volume of the molten metal at the surface is smaller than in stainless or carbon steel, the probe metal moves almost vertically. The washing action of the superheated molten metal on unmelted portions contributes greatly to uniform intermixing. Apparently, the electron beam not only penetrates the metal as a result of strong overheating and vaporizing of the central portion of the fusion zone, but also exerts pressure on the molten metal. In the carbon steel plate, for example, metal of the titanium probe located at a depth of 6.5 mm from the surface was distributed uniformly along the entire depth of penetration (15 mm). Orig. art. has: 2 figures.

ASSOCIATION: none

SUBMITTED: 00

SUB CODE: ML

DATE ACQ: 27Aug63

NO REF SOV: 003

ENCL: 00

OTHER: 001

Card 2/2

NAZARENKO, O. K.; POVOD, A. G.; LEONT'YEV, N. N.

Experiments on electron beam welding in vacuum $1 \cdot 10^{-1} + 1 \cdot 10^{-2}$ mm rt. st. Avtom. svar. 16 no.3:88-89 Mr '63.
(MIRA 16:4)

(Electric welding—Equipment and supplies)
(Electron beams) (Vacuum technology)

1 2310 1140 1138 2708 1573

26182
S/125/61/000/005/006/014
D040/D113

AUTHORS: Nazarenko, O. K.; Povod, A. G.

TITLE: Experimental study of a welding electron gun with a spherical-type projector of long focal length

PERIODICAL: Avtomaticheskaya svarka, no.9, 1961, 33-37

TEXT: A new welding electron gun is described. Its combination focusing system (Fig.1) produces a beam of up to 120 ma and up to 5 kw/mm² energy in the focus spot. Welded joints with weld shape factor below 1.5 have been obtained in experiments with this gun without raising the accelerating voltage over 20 kv. This disproves the opinion that it is impossible to produce welds with a shape factor below 3:1 with the use of low-voltage welding guns (Ref.1: G.Burton, R.L.Matchett, Electrons shot from guns make high-purity welds, "American Machinist", v. 103, no.4, 1959). The gun (Fig.1) primary electrostatic system has a cathode unit (1) cathode electrode (2) and an accelerating electrode (anode) (3) with aperture for the beam. Current is supplied through two high-voltage and two low-voltage leads (4). The electron beam passes through the anode electrode and aperture diaphragm (5) and is

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Experimental study of a welding electron

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finally focused by an armored electromagnetic lens (9). The gun is attached to the flange (10) of the vacuum chamber by sockets by which the distance between the chamber axis and the electromagnetic lens can be varied. The cathode and anode are shaped like parts of concentric spheres with a radius ratio $\frac{r_{cath}}{r_{an}} = 2.5$. The calculation of the projector is given in another

work. (Ref.2: O.K.Nazarenko, "Avtomaticheskaya svarka", n.6, 1961). The cathode material is lanthanum hexaboride (LaB_6). Cathodes of this material have a high emission density ($j = 10 \text{ amp/cm}^2$ at $1600^\circ C$), stability against ion bombardment and require no activation after contact with air. The article includes a general view photograph of the gun and two macrophotographs of two welds produced in stainless steel and molybdenum. There are 6 figures and 2 references: 1 Soviet and 1 non-Soviet bloc. The one reference to English language publication reads: G.Burton, R.L.Matchett, Electrons shot from guns make high-purity welds, "American Machinist", v. 103, no.4, 1959.

Card 2/4

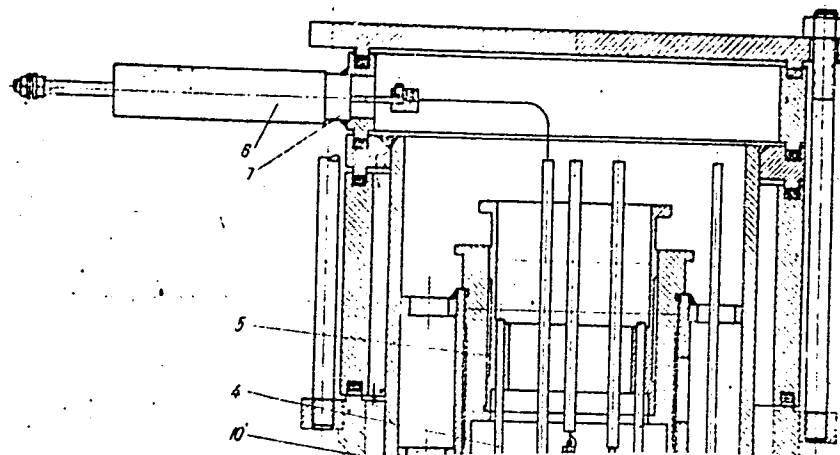
26482

Experimental study of a welding electron

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D040/D113

ASSOCIATION: Ordena Trudovogo Krasnogo Znameni Institut elektrosvarki im.
Ye.O.Patona AN USSR (Electric Welding Institute "Order of the
Red Banner of Labor" im. Ye.O.Paton, AS UkrSSR)

SUBMITTED: March 18, 1961



Card 3/4

ACCESSION NR: AP4020103

S/0125/64/000/003/0044/0049

AUTHOR: Nazarenko, O. K. (Candidate of technical sciences); Povod, A. G. (Engineer); Shnyakin, N. S. (Engineer, Moscow); Artamonov, N. N. (Engineer, Moscow); Panov, Yu. P. (Engineer, Moscow); Kedman, A. B. (Engineer, Moscow)

TITLE: Equipment and techniques of electron-beam welding of large pieces

SOURCE: Avtomaticheskaya svarka, no. 3, 1964, 44-49

TOPIC TAGS: electron beam welding, welding, electron beam welding equipment, electron beam welding method, U86, electron beam welder, dagger shaped fusion

ABSTRACT: An experimental outfit for electron-beam (circular) welding of large-size pieces is described which can be mounted on a "telescopic" carriage with a headstock and tailstock and introduced into a cylindrical (4-m length, 2-m diameter) vacuum chamber; 20-mm-thick stainless steel was used for building

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ACCESSION NR: AP4020103

the chamber. A d-c motor mounted on the carriage ensures an adjustable welding rate within 5-100 m/hr. A VN-6 fore-vacuum pump, an N-20T oil-vapor fine-vacuum pump, and a BN-3 oil-vapor booster pump, with a combined output of 10,000 lit/sec, exhaust the chamber down to 10^{-4} - 10^{-5} torr. Three electron guns are used with these parameters: accelerating voltage, 10-25 kv; test voltage, 50 kv; beam current, 0-500 ma; specific energy in the focal beam spot with optimum lens distance, 5-10 kw/mm². Some details of welding procedures are given. "A. M. Svyat*skiy was the leading designer. Engineers A. A. Mikhaylovskiy, V. I. Khoroshilov, A. L. Loginov, and V. F. Illarionov took part in designing the outfit. V. M. Shiyan was the leading designer of the electron gun." Orig. art. has: 5 figures and 1 table.

ASSOCIATION: Institut elektrosvariki im. Ye. O. Patona AN UkrSSR (Institute of Electric Welding, AN UkrSSR)

SUBMITTED: 21Dec63

DATE ACQ: 31Mar64

ENCL: 00

SUB CODE: ML

NO REF SOV: 000

OTHER: 000

Card 2/2

30826
S/125/62/000/007/009/012
D040/D113

1.2300

AUTHORS: Kuzhel', A.V. ; Nazarenko, O.K. ; Povod, A.G ; Strekal', L.P.

TITLE: A universal welding electron gun with up to 50 kv acceleration voltage

PERIODICAL: Avtomaticheskaya svarka, no. 7, 1962, 88-91

TEXT: The described electron gun (Fig. 5) of the Institut elektrosvarki im. Ye.O. Patona (Electric Welding Institute im. Ye.O. Paton) is used in γ -3 (U-3) electron beam welding machines, and permits the accelerating voltage to be adjusted in the 15-25 kv and 25-50 kv ranges. It can be used for welding various metals of different thickness such as thin sheet molybdenum or tungsten and thick aluminum or stainless steel. The gun has a 3-electrode projector with a lanthanum boride cathode, and a one-stage electromagnetic focusing lens of 2,000 amp-t in a screen of armco iron. The long current supply system of the cathode reduces the heat transfer to the vacuum, which seals off the armored high-voltage insulator. A metal bellows joint permits the projector to be displaced along the gun axis during operation, and also allows the space between the focusing electrode and the

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D040/D113

A universal welding

anode to be adjusted without disturbing the vacuum in the gun. The entire gun can be tilted 15° from the vertical axis to adjust the focal spot to the work edges. An electromagnetic deflecting system placed under the focusing lens deflects the beam by $5-10^{\circ}$ along the seam; this protects the cathode from metallization and ion bombardment. There are 6 figures.

ASSOCIATION: Ordena Trudovogo Krasnogo Znameni Institut elektrosvarki im. Ye.O. Patona AN USSR (Electric Welding Institute "Order of the Red Banner of the Labor" im. Ye.O. Paton, AS UkrSSR)

SUBMITTED: November 4, 1961

Card 2/8 *z*

POREBY, V.

Relationship between the textile industry and the consumer. p. 23.
NOVA PROIZVODNJA. (Zveza drustev inženirjev in tehnikov LPS)
Ljubljana. Vol. 7, no. 3/4, June 1956.

SOURCE: East European Accessions List, (EEAL), Library of Congress,
Vol. 5, no. 12, December 1956

ARBUZOV, B.A.; 1963; 10/10/63; 10/10/63; 10/10/63.

Structure of acetates of unsaturated alcohols obtained in the reaction of 3 α -pinene oxide with acetic anhydride. Izv. AN SSSR. Ser. khim. no. 12:2144-2152 '65.

(MIRA 18:12)

I. Nauchno-issledovatel'skiy institut im. A.M. Butlerova Kazanskogo gosudarstvennogo universiteta im. V.I. Il'yanova Lenina. Submitted August 5, 1963.

ISAYEVA, Z.G.; ARBUZOV, B.A.; RATNER, V.V.; POVODYREVA, I.P.

Oxidation of ⁴³ -carene by mercury acetate. Izv. AN SSSR. Ser. khim.
no.3:466-475 '65. (MIRA 18:5)

1. Khimicheskiy institut im. A.M.Bu'lerova Kazanskogo gosudarstven-
nogo universiteta im. V.I.Ul'yanova-Lenina.

POVOLETSKAYA, G.M.

Third Ukrainian Scientific and Practical Rheumatological
Conference. Vop. revm. 2 no. 391-93 Ap-Je'62 (MIRA 17:3)

ABRUCOW, B.A.; AKADEMIZ; SAYINA, S.G.; POVOLOYEVA, I.I.

Structure of unsaturated alcohol acetates from the reaction of
 Δ^3 -carene oxide with acetic anhydride. Dokl. AN SSSR 159
no.4:827-830 0 164 (MIRA 18:1)

1. Nauchno-Issledovatel'skiy khimicheskiy institut im. A.M.
Butlerova pri Kazanskom gosudarstvennom universitete im.
V.I. Ul'yanova-Lenina.

PROCESSED AND PREPARED BY																									
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100																									
CA Supply of Vitava River water to the Poldi steel mills in Klendo. - Alois Puyolay. <i>Patna a vsta</i> 26, 28, 31, 60, 72 (1940). - The purification, filtration, and pumping station is described. The water is yellowish to yellow, has a temp. of 4-20°, pH 6.6-7.1, contains NH₃ 0.5-0.15 mg./l., suspended matter 50-75 mg./l., dissolved solids 120-150 mg./l., org. matter (consumption of KMnO₄) 40-75 mg./l., dissolved O₂ 7-11 mg./l., free CO₂ 8-10 mg./l., dissolved Fe 0.2-0.4 mg./l., Mn 0.0-0.02 mg./l., hardness 3.5-4.2 German degrees, carbonate hardness 1.5-3.4 German degrees, R.O.D. 3-5 mg./l. The compn. of the water does not change with depth. Pollution of the water is due to city sewage (Prague), and to limes in the rainy season. Lime is added occasionally to form a protective layer in the limes.																									
ASAC-VLA METALLURGICAL LITERATURE CLASSIFICATION SECTION DIVISION GROUPS 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100																									

POVOLITSKIY, D. Ya.; BAKSHI, O.A.

Effect of internal stresses on flake formation in steel.
Izv.vys.ucheb.zav.; chern.met. no.6:124-130 '60.
(MIRA 13:7)

1. Chelyabinskiy politekhnicheskiy institut.
(Steel--Metallography) (Strains and stresses)

POVOLNY, A.

Improving the operation of machine-tractor stations under difficult soil conditions. P. 159. (Mechanisace Zemedelstvi, Vol. 7, No. 7, Apr. 1957, Praha, Czechoslovakia)

SO: Monthly List of East European Accessions (EEAL) LC, Vol. 6, No. 8, Aug 1957. Uncl.

Czechoslovakia

G

Abs Jour : Ref Zhur - Biologiya, No 22, 1958, No 99636

Author : Grulich, I.; Povolny, B.

Inst : Not given

Title : On the Ecology of the Family Nycteribidae and a Detailed Study of their Hosts.

Orig Pub : Zool.listy, 1956, 5, No. 2, 97-100

Abstract : Sucked blood was collected from bats obtained from the caves of southern Slovakian karst. The most complete collections were obtained from narcotized bats. The number of parasites discovered on one individual *Miniopterus schreibersi* varied between 2-5 and more, and those on *Rhinclophus ferrum-equinum* and *Myotis myotis* equaled 2. A study of the ecology of the species of the family of Nycteribidae demonstrated a high species specificity of some of them which is determined not by particularities of the host, but by the microclimate of the habitat

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Czechoslovakia

G

Abs Jour : Ref Zhur - Biologiya, No 22, 1958, No 99636

of the bats. For instance, *Penicillidia dufouri*, a specific parasite of *M. Myotis*, is found on it more frequently in the warm districts of the southeast, although *M. Myotis* is found in the whole territory of Czechoslovakia. The presence of *Nycteribia* upon not characteristic hosts was demonstrated, which is explained by the common ecology of bats and their contact in the summer period. A conclusion was made on the stenothermal and stenohydric character of the majority of the species of the family of *Nycteribiidae*.--From the authors' summary.

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POVCLNY, Dalibor, dr., C.Sc. (Brno, Zemedelska 1); MOUCHA, Josef, C.S.
(Praha, Narodni muzeum)

On taxonomy of *Narraga tessularia* ilia Whli. with some
observations on the family *Narraga* (Lepidoptera, Geometridae).
Cas entom 59 no.2:152-155 '62.

1. Biologisches Institut der Tschechoslowakischen Akademie
der Wissenschaften und Entomologische Abteilung der
Nationalmuseums.

GREGOR, Frantisek, dr., inz.; POVOLNY, Dalibor, doc., dr., inz.;
REZAC, Miroslav, inz., dr.

Systematic oligophagy of the Central-European species of the
genus *Lithocolletis* Hbn. and *Argyresthia* Hbn. (Lep.) on
Prunoideae. Cas entom 60 no.1/2:81-93 '63.

1. Institute of Parasitology, Czechoslovak Academy of
Sciences, Brno, Zemedelska 1 (for Gregor and Povolny).
2. Institute of Applied Entomology, University School of
Agriculture, Brno, Zemedelska 1 (for Rezac).

POWELL, D.

"A Contribution To The Knowledge Of The Availability Of Strains For Oil And Gas And Its Technic And Engineering." U.S. (1940). Vol. 1, No. 1, 1940, 1940, 1940.

SC: Monthly list of East European Agents no.,/Name, Vol. 1, Page no., Serial no., Date.

POVOLNY, D.

"The 19th Congress of the Communist Party of the Soviet Union and Tasks of Our Zoology and Entomology." p. 73.
(Zoologicke A Entomologicke Listy. Vol. 2, no. 2, June 1953.. Praha).

East European Vol. 3, No. 6
SO: Monthly List of ~~Russian~~ Accessions,/Library of Congress, June 195⁴₇, Uncl.

POVOLNY, Dalibor

Attempted interpretation of generative cycle in insects
without diapause. Cesk. biol. 4 no.2:82-87 Feb 55.

1. Biologický ústav CSAV, parazitologie, Praha.
(INSECTS,
life cycle without diapause.)

POVOLNY, D.

Povolny, D.

Occurrence of dwarf forms of diurnal butterflies in the serpentine steppe near
Mohelno. p. 9.

Vol. 10, no. 1, Feb. 1955
OCHRANA PRIRODY

SO: Monthly List of East European Accession, (EEAL), LC, Vol. 4, No. 9,
Sept. 1955, Uncl.

POVOLENY, D.; HONDA, J.

Povolny, D.; Honda, J. Monthly list of new accessions of the genus *Epodes* Fr. (Hesperiidae) in the Tatra and Riesengebirge National Parks (Lepidoptera).
p. 148. OCHRANA PŘÍRODY. Praha. Vol. 10, no. 5, 1955.

S0: Monthly list of East European Accessions, (MEAL), 13, Vol. 4, no. 11,
Nov. 1955, Uncl.

POVOLNY, D.; GRAY, F.

New and important discoveries of Lepidoptera in Czechoslovakia. p. 114.
Brno. Moravské museum. CASOPIS. ACTA. Brno. Vol. 40, 1955.

SOURCE: East European Accessions List, Vol. 5, no. 9, September 1956

OWOLNY, R.; OWOLNY, R.

Fragments concerning the family of Procris Fabr. (Lep. Nym). p. 130.
Brno. Moravske museum. CASOPIS. ACTA. Brno. Vol. 40, 1955.

SOURCE: East European Accessions List, Vol. 5, no. 7, September 1956

POVOLNY, D.; ~~REDACTED~~ J.

SCIENCE

Periodicals: Ceskoslovenska spolecnost entomologicka, CASOPIS. ACTA
SOCIETATIS ENTOMOLOGICAE CECOSLOVENIAE. Vol. 52, 1955

POVOLNY, D.; ~~REDACTED~~. Beometridae of the genus Psodos Tr. living in the
high mountains and the problem of the origin of its species in
mountainous areas. p. 183.

Monthly List of East European Accessions (EEAI) LC, Vol. 8, No. 5,
May 1959, Unclass.

CZECHOSLOVAKIA / General and Special Zoology. Insects. P
Biology and Ecology.

Abs Jour: Ref Zhur-Biol., No 12, 1958, 54287.

Author : Povolny, D.
Inst : Higher School of Agriculture, Forest Faculty, Brno.
Title : Stenophagia and Systematic Oligophagia of the Mining
Insects and Its Relation to Some Questions on the
Origin of the Species.

Orig Pub: Sbor. Vysoke skoly zemed. a Lesn. fak. Brne, 1956,
A, No 4, 291-302.

Abstract: The author examines from the viewpoint of evolution
the ecological and biological peculiarities of the
spotted moths (*Lithocolletis* Hbn.), the caterpillars
of which are leaf miners. Examining in this genus
the relation between the insect and the host plant,
and the specific nutritive source, the author

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CZECHOSLOVAKIA / General and Special Zoology. Insects. P
Biology and Ecology.

Abs Jour: Ref Zhur-Biol., No 12, 1958, 54287.

Abstract: reaches the following conclusions: 1) the evolution of the forms narrowly specialized with regard to nutrition (mono- and oligophages) and mining in closely related hosts, takes place under the direct influence of the feeding plant as an environmental factor. Differentiation of the miner progresses parallel to differentiation in the feeding plants but proceeds more slowly; 2) the study of the miners of mono- and oligophages, of their phylogeny and origin is of substantial significance for an understanding of their feeding plants. The presence of any mining insect cannot be considered as an indicator of the proximity of the plant hosts, but in a number of cases this could not be denied; 3) the differentiation of the feeding plants by the insects

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10

CZECHOSLOVAKIA / General and Special Zoology. Insects. P
Biology and Ecology.

Abs Jour: Ref Zhur-Biol., No 12, 1958, 54287.

Abstract: takes place on the sulfur-diagnostic basis, inasmuch as the chief nutritive substance for the larva are the leaf proteins specific for different plants. This is not contradicted by the fact that the choice of plant is actually made by the butterfly which is only one of the ontogenetic stages of the species; 4) although mono- and oligophagia in the miners does not always indicate kinship between the feeding plants, this should be taken into consideration under certain circumstances. -- D. P. Dovnar-Zapolskiy.

Card 3/3

POUNCEY, D.

7. Brink, J. C. and Brown, F. S., in A. S. G. (ed.), *Control of Plant
Pests*. (Proceedings of the 1st International Conference on Plant
Pests, 1964, held in the Field of Plant Protection); a book review.
p. 248. *PLANTIA*. (Society for the Study of Plant Pests), vol. 11,
no. 1, 1966.

SOURCE: *Best Accessions List*, (EAL), Library of Congress
Vol. 5, no. 12, December 1966.

POVOLNY, D.

External genitalia of the order, Lepidoptera, as a basis for morphologic and taxonomic studies. p. 315. (PRACE, Vol. 22, No. 7, 1956, Brno, Czechoslovakia)

SO: Monthly List of East European Accessions (EEAL) LC, Vol. 6, No. 12, Dec 1957. Uncl.

CZECHOSLOVAKIA/General and Systematic Zoology. Insects. System- P
atics and Faunistics.

Abs Jour : Ref Zhur - Biol., No 3, 1959, No 11481.

Author : Povol'nyy D.

Inst : -

Title : A Critical Study of the Cimicidae Bugs in Czechoslovakia.

Orig Pub : Zool. listy, 1957, 6, No 1, 57-80

Abstract : A literature review on the Cimicidae species, kinship
ties and family phylogeny. A detailed description and
illustrations of the structure of separate body parts of
three Cimicidae representatives. -- From the authors sum-
mary.

Card : 1/1

GREGOR, F.; POVOINY, D.

Study on a classification of synanthropic flies (Diptera). J. Hyg.
Epidem., Praha 2 no.2:205-216 1958.

1. Ceskoslovenska akademie ved, Biologicky ustav, parasitologicke odd.,
Praha XIX, Na cvicisti 2, Czechoslovakia.

(FLIES,

classif. by ecol. relation to man & his environment (Ger))

LYSENKO, O.; POVOLNY, D.

The microflora of synanthropic flies in Czechoslovakia.
Folia microbiol 6 no.1:27-32 '60. (EEA 10:5)

1. Laboratory of Insect Pathology(for Lysenko) Department of
Parasitology(for Povolny) Institute of Biology, Czechoslovak
Academy of Sciences, Prague.
(CZECHOSLOVAKIA--FLIES) (MICROFLORA)

GREGOR, Frantisek; POVOLNY, Dalibor

A contribution to knowledge of the synanthropic flies of Hungary.
Cas entom 57 no.2:158-177 '60. (EEAI 10:1)

1. Parasitologische Abteilung des Biologischen Institutes CSAV
(Ceskoslovenske akademie ved)
(Hungary--Flies)

POVOLNY, D.

"Tortricids (s.str.) (Tortricidae)" by H.J.Hannemann. Reviewed by
D.Povolny. Cas entom 59 no.3:295-296 '62.

POVOLNY, Dalibor, doc. dr. (Brno. Zemedelska 1)

Gnorimoschemini trib. nov., a new tribe of the Gelachiidae family and remarks on its taxonomy. Cas entom 61 no.4:330-359 0 '64.

1. Institute of Parasitology of the Czechoslovak Academy of Sciences and the Chair of Zoology of the Higher School of Agriculture, Brno. Submitted March 26, 1964.

POVOLNY, Dalibor, doc. inz. dr. CSc. (Brno, Zemedelska 1)

Results of the examination of some types of the family Gelechiidae
(Lep.). Cas entom 61 no.1:53-57 '64.

1. Parasitologisches Institut der Tschechoslowakischen
Akademie der Wissenschaften.

POVOLNY, Dalibor, doc. inz. dr. CSc. (Brno, Zemedelska 1)

Results of the examination of some types of the family Gelechiidae
(Lep.). Cas entom 61 no.1:53-57 '64.

1. Parasitologisches Institut der Tschechoslowakischen
Akademie der Wissenschaften.

POVOLNY, D.

"The ontogeny of insects". Reviewed by D. Povolny.
Cas entom 59 no.1:100 '62

POVOLOCHKIY, A. I.

Mathematical Reviews
May 1954
Analysis

10-7-54
LL

✓ Krasnosel'skii, M. A., and Povolockii, A. I. On variational methods in the problem of branch points. Doklady Akad. Nauk SSSR (N.S.) 91, 19-22 (1953). (Russian)

The authors announce several results concerning branch points of nonlinear operators (for terminology see the preceding review), of which the following two are typical. (I) Suppose Γ is as in the paper reviewed above with the additional hypothesis that B is positive-definite. Also suppose J is a unitary operator that commutes with B , and JB has a finite number of positive eigenvalues. Then the smallest positive eigenvalue of B is a branch point of J . (II) Suppose H is the orthogonal sum of H_1 and H_2 , where H_1 is finite-dimensional, and J is defined by $J(x+y) = x-y$ ($x \in H_1, y \in H_2$). Suppose the weakly continuous functional is such that in the subset $\|x\| \geq \|y\|$, $\lim_{\|x-y\| \rightarrow \infty} \Phi(x+y) = +\infty$, and the completely continuous operator Γ ($\Gamma\theta = \theta$) is the gradient of Φ . Then $J\Gamma$ has at least a denumerably infinite number of eigenvectors, among them such of arbitrarily large norm. It is hinted that the proofs are based on the minimization (or maximization) of Φ on the hyperboloid $(J\varphi, \varphi) = \text{const}$. M. Golomb.

Povolochko, P.A.

USSR/Cultivated Plants - Fruits. Berries.

L-6

Abs Jour : Ref Zhur - Biologiya, No 16, 25 Aug 1957, 69391

Author : Povolochko, P.A.

Inst :

Title : Industrial Cultivation of Almonds in Dagestan.

Orig Pub : Sad i ogorod, 1957, No 2, 43-47

Abst : No abstract.

Card 1/1

POVOLOCHKO, P. A.

Citrus Fruits - Daghestan

Ways to cover trenches in Daghestan. Dost. sel'khoz. No. 2, 1953.

9. Monthly List of Russian Accessions, Library of Congress, June 1953. Unclassified.

17-1

BC

Vitamin-C in germinating seeds. K. L. Povolockaja (Compt. rend. Acad. Sci. U.R.S.S., 1937, 17, 35-38).—The rate of production of vitamin-C during seed germination is greater in legumes than in cereals and diminishes with increasing age of seeds in parallel with the loss of germinating power. Cotyledons in legumes produce -C even if the plumule is removed; the endosperm is unable to synthesize -C. The developing root and shoot withdraw -C from cotyledons during the first few days of germination. Respiratory activity of germinating seeds is related to the -C accumulation. The O_2 consumption of the ascorbic acid-ascorbic system fully accounts for that of the whole germinating seed.

A. G. P.

ASM-51A METALLURGICAL LITERATURE CLASSIFICATION

SEARCHED INDEXED

11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

RE

Determination of flavin (vitamin-B₂) in vegetable materials.
K. L. Povolutskaja (*Biochimie*, 1939, 6, 327—335).—The methods of Euler and Adler (A., 1934, 544), Warburg and Christian (A., 1935, 1286; 1936, 160), and Emmervik (A., 1937, III, 325) are discussed. The first two methods are not directly applicable without a pretreatment which varies in each case owing to the large amount of other yellow pigments in plants. The best method is the last, which depends on the separation of flavin from other pigments by adsorption on PbO. Adsorption and elution with aq. pyridine must be carried out 3 successive times in order to obtain a recovery of 90—95% of the flavin as only 45—55% is determined by a single adsorption and elution. Data are given for the amount of flavin in seeds from germination to maturity. J. N. A.

7

CA

Replacing hydrosulfonic acid with sodium chloride in the determination of silicic acid. G. I. Povolotskaya, Zashchita Lab. 11, 850 (1945). In detg. Si in Fe alloys, sometimes the sample is fused with alkali peroxide, the melt extd. with water + HCl + H₂SO₄ and the H₂SO₄ ppt. by adding gelatin and heating. Since H₂SO₄ is present, the added HCl can be replaced by NaCl soln. W. R. H.

ASB-5LA METALLURGICAL LITERATURE CLASSIFICATION

POVOLOTKI, D. I. [Povolotskiy, D. I.]

Bath boiling and variation of hydrogen contents in the course of
open-hearth smelting. *Analele metalurgie* 15 no.4:45-53 O-D '61.

(Hydrogen) (Open-hearth process)

S/081/62/000/012/012/063
B168/B1C1

AUTHOR: Povolotskaya, G. L.

TITLE: Accelerated analysis of titanium concentrate for titanium dioxide and silicon dioxide

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 12, 1962, 162, abstract 12D132 (Metallurg. i khim. prom-st' Kazakhstana. Nauchno-tekhn. sb., no. 5(15), 1961, 76 - 77)

TEXT: A method has been devised for accelerated determination of TiO_2 and SiO_2 in titanium concentrate from a single batch. This method is based on photometric measurement of Ti in the form of a complex with H_2O_2 and of Si in the form of a blue silico-molybdenum complex. 0.2 g of the sample is fused in an iron crucible with 3.5 - 4 g Na_2O_2 at 800 - 850°C. The melt is leached with 80 - 100 ml water, the crucible is washed with water, with a solution of HCl (5 ml) and again with water, 20 ml HCl is added to the solution obtained and the mixture is boiled, left to stand for 3 - 4 min.

Card 1/2

Accelerated analysis of titanium ...

S/061/62/012/018/063
B168/B101

until a transparent solution is obtained, cooled and diluted with water to 500 ml. For determination of Ti, 1 ml H_3PO_4 (1:1) and 1 ml H_2O_2 are added to 25 ml of the solution obtained, the mixture is diluted to 100 ml and is measured photometrically with a lilac light-filter in 30-cm cells. For determination of Si, 10 ml water, 10 ml H_2SO_4 (1:100) and 5 ml 5 % aqueous solution of ammonium molybdate are added to 5 ml of the initial solution, the mixture is left to stand for 5 min, 10 ml 10.6 N H_2SO_4 , 40 ml water and 4 ml 0.5 % solution of $SnCl_2$ are added and the mixture is then diluted with water to 100 ml and is immediately measured photometrically in 10-mm cells with a red light-filter, water being used as reference solution. The Ti and Si contents are determined by comparison with a standard sample. For a determination of Ti and Si by this method the time taken for the analysis is reduced by 25 - 30 % and use of a platinum dish for HF is no longer necessary. [Abstracter's note: Complete translation.]

Card 2/2

POVOLOTSKIY, D.Ya.; VAYNSHTEYN, G. Ya.; KHRYUKINA, V.A.; VOTYAKOV,
A.A.

Content of ferrous oxide in slag before decidation and the
quality of alloyed, low-carbon, open-hearth steel. Izv.vys.
ucheb.zav.; chern.met.7 no. 4:43-47 '64. (MIRA 17:5)

1. Chelyabinskiy metallurgicheskiy zavod i Chelyabinskiy
politekhnicheskiy institut.

KATS, M.Sh.; KHANINA, N.M.; POVOLOTSKAYA, G.L.; ZHURAVLEVA, V.I.

Determination of sulfur in carbon ferrochromium. *Zav. khim.* 3,
no.8:944-945 '65. (MIRA 18:9)

1. Aktyubinskiy zavod ferrosplavov.

Ca

116

Ketogenic pituitary substance in the blood and urine of diabetic individuals. G. M. Poyshchaya. *Bull. biol. med. exp.* U. R. S. S., 208-11 (1957); *Chem. Zentr.*, 1959, II, 141; cf. C. A. 35, 11047. —A study on 20 diabetic individuals is reported. Blood serum drawn after fasting showed in individual cases a more pronounced ketogenic effect and produced a more marked hyperglycemia in rabbits and had a stronger glycogenolytic action on rats than serum from normal individuals. Diabetic serum with weak ketogenic activity showed sometimes stronger and sometimes weaker ketogenic action after ingestion of fat than serum taken from fasting individuals. Exts. from diabetic urine had no definite effect on ketonemia in rabbits and rats, on glycemia in rats, or on the glycogen and fat contents of the rat liver. The significance of the different behavior of diabetic serums in the consideration of questions of the etiology and therapy of individual cases of diabetes is discussed. M. G. M.

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION

1ST AND 2ND ORDERS																										3RD AND 4TH ORDERS																									
PROCESSES AND PROPERTIES INDEX																																																			
<i>ca</i> The ketogenic substance of the pituitary in the blood and urine of patients with acromegaly. G. M. Pavlovskaya. <i>Alim. Med.</i> (U. S. S. R.) 18, No. 1, 82-7 (1940); <i>Chem. Zentr.</i> 1940, II, 1003; cf. <i>C. A.</i> 35, 3315. The ketogenic pituitary substance was assayed by detg. the sugar content of the blood of a rabbit after injection of serum from the patient. When such tests were made on a no. of acromegaly patients after the administration of fat, the ketogenic pituitary substance was found to be present in the majority of cases as a result of a hyperfunctioning of the pituitary. In cases of combined acromegaly and diabetes differentiation was possible by detg. the ketogenic substance in the blood of the patient after fasting. M. G. Moore																																																			
COMMON ELEMENTS OPEN WATERGULL MOET ASB-3LA METALLURGICAL LITERATURE CLASSIFICATION 1ST AND 2ND ORDERS 3RD AND 4TH ORDERS																																																			

POVOLOTS'KA, G.M.
AYZENBERG, O.A., prof.; POVOLOTS'KA, G.M.

Materials on disorders in carbohydrate metabolism in wounds sepsis.
Medych.zhur. 17:142-161 '47. (MIRA 11:1)

1. Z Ukrains'kogo institutu klinichnoi meditsini (direktor - akad.
M.D.Strazhesko).
(CARBOHYDRATE METABOLISM)

POVOLOTS'KA, G.M.

AYZENBERG, O.A., prof.; POVOLOTS'KA, G.M.

Disorders in antitoxic hepatic function in wound sepsis. Medych.
zhur. 17:162-176 '47. (MIRA 11:1)

1. Z Ukrainского institutu klinichnoi meditsini (direktor - akad.
M.D.Strazhesko).
(LIVER--DISEASES) (WOUNDS) (URINE--SECRETION)

AYZENBERG, O.A., prof.; POVOLOTS'KA, G.M.; LESHCHINS'KA, Ya.S.

Evaluation of the adrenaline test. Medych.zhur. 21 no.6:65-76 '51.
(MIRA 11:1)

1. Z viddilu funktsional'noi diagnostiki (zav. - prof. O.A.Ayzen-
berg) Ukrains'kogo institutitu klinichnoi meditsini (direktor -
akad. M.D.Strazhesko)
(ADRENALINE) (LIVER--GLYCOGENIC FUNCTION)

POVOLOTSKAYA, G. M.

AYZENBERG, A. A.; POVOLOTSKAYA, G. M.

Disorder of anti-toxic liver function in infectious and
certain liver diseases. Klin. med., Moskva 29 no.8:63-65
Aug 1951. (CLML 20:11)

1. Professor. 2. Of the Department of Functional Diagnosis
(Head -- Prof. A. A. Ayzenberg), Ukrainian Institute of
Clinical Medicine (Director -- Academician N. D. Strazhesko).

POVOLOTSKAYA, G.M.; TARTAKOVSKAYA, B.E.

The amount of circulating blood in patients with cardiovascular defects, as determined by means of radioactive phosphorus. Vest.rent. 1 rad. no.5:29-40 S-O '55.(MLRA 9:1)

1. Iz otdeleniya funktsional'noy diagnostiki (zav.--prof. A.A.Ayzenberg) i laboratorii izotopov (zav.--prof. D.N. Yanovskiy) Ukrainskogo nauchno-issledovatel'skogo instituta klinicheskoy meditsiny imeni akad. N.D.Strazhesko(dir.--prof. A.L.Mikhnev)

(BLOOD VOLUME, in various dis.

cardiovasc.dis.determ. with radioactive phosphorus)

(PHOSPHORUS, radioactive

in determ. of blood volume in cardiovasc.dis.)

(CARDIOVASCULAR DISEASES

blood volume determ. by radioactive phosphorus)

POVOLOTSKAYA, G.M.

Characteristic of oxygen deficiency in various forms of endocarditis.
Vrach.delo no.4:361-363 Ap '57. (MLBA 10:7)

1. Otdel funktsional'noy diagnostiki (zav. - prof. A.A.Ayzenberg)
Ukrainskogo nauchno-issledovatel'skogo instituta klinicheskoy
meditsiny im. akad. N.D.Strazhesko.
(ENDOCARDITIS) (ANOXEMIA)

V-5

USSR/Human and Animal Physiology - Respiration.

Abs Jour : Ref Zhur - Biol., No 4, 1958, 18236

Author : G.M. Povolots'ka

Inst :

Title : Certain Compensatory Mechanisms in Circulatory Hypoxia.

Orig Pub : Fiziol. zh. 1957, 3, No 3, 123-132

Abstract : In patients with chronic circulatory insufficiency due to cardiac defects, a study was made of the blood combining curves of O_2 and CO_2 , the gaseous composition of the arterial and venous blood, oxygen capacity, the content of total and reduced glutathione, and the circulating blood volume. In the majority of patients the oxygen capacity remained normal and increased only in stage IIB. A mild reduction in oxygen capacity, which attained significant proportions, was noted in individual cases in stage III, the dystrophic stage. In the initial stages of circulatory insufficiency an increased output of O_2 by oxyhemoglobin

POVOLOTSKAYA, G.M.

Some regularities in the disturbance of gas exchange in endocarditis and circulatory insufficiency. Mat.po obm.nauch.inform. no.2:105-111 '58. (MIRA 13:6)

1. Iz otdela funktsional'noy diagnostiki (zav. - prof. Aysenberg) Ukrainskogo nauchno-issledovatel'skogo instituta klinicheskoy meditsiny, Kiyev.
(RESPIRATION) (ENDOCARDITIS) (BLOOD--CIRCULATION, DISORDERS OF)

EXCERPTA MEDICA Sec 18 Vol 3/2 Cardio. Dis. Feb 59

444. *Gas metabolism and the respiratory function of blood in different forms of endocarditis and circulatory failure (Russian text)* POVOLOTSKAYA G. M. Dept. of Funct. Diagn. 'N.D. Strazhesko', Ukrainian Res. Inst. for Clin. Med., Kiev, USSR *Vopr. Med. Khimii* 1958, 4/3 (187—198) Graphs 4

300 patients with endocarditis and circulatory failure were examined. In mild forms of endocarditis the basal metabolic rate increases, and with increasing gravity of the disease decreases. In these cases a low value of the respiratory quotient, lowering of the carbon dioxide capacity and carbon dioxide content of the blood, of the oxygen capacity, total blood glutathione and percentage of reduced glutathione was demonstrated. Dissociation curves have a hyperbolic character. In chronic circulatory failure a rise of the basal metabolic rate and of blood oxygen utilization were observed. In some of these patients the same abnormalities of the oxygen dissociation curves were seen as in the group of severe endocarditis. This may indicate the presence of a latent endocarditis. Pferovsky - Prague (XVIII, 15*)

POVOLOTSKAYA, G.M.

Gas exchange and respiratory function of the blood in different forms of endocarditis and circulatory failure [with summary in English].
Vop.med.khim. 4 no.3:187-198 My-Je '58 (MIRA 11:6)

1. Otdel funktsional'noy diagnostiki Ukrainского nauchno-issledovatel'skogo instituta klinicheskoy meditsiny imeni akademika N.D. Strazhesko, Kiev.

(ENDOCARDITIS, metabolism
gas metab. & resp. funct. of blood (Rus))
(BLOOD CIRCULATION, in various diseases
endocarditis (Rus))

AYZENBERG, A.A., prof.; LESHCHINSKAYA, Ya.S., kand.med.nauk; POVOLOTSKAYA,
G.M., kand.med.nauk; BERDAKINA, Ye.A., nauchnyy sotrudnik

Some problems in the pathogenesis and clinical characteristics of
rheumatic lesions in the cardiovascular system. Vrach. delo no.12:
48-54 D '61. (MIRA 15:1)

1. Ukrainskiy nauchno-issledovatel'skiy institut klinicheskoy
meditsiny im. akad. N.D.Strazhesko.
(CARDIOVASCULAR SYSTEM DISEASES)
(RHEUMATIC HEART DISEASE)

POVOLOTSKAYA, G.M.

Corticosteroid therapy and the function of the adrenal cortex.
Probl. endok. i gorm. 11 no.6:3-9 N-D '65. (MIRA 18:12)

1. Ukrainskiy nauchno-issledovatel'skiy institut klinicheskoy
meditsiny imeni N.D. Strazhesko (dir. - prof. A.L.Mikhnev), Kiyev.

POVOLOTSKAYA G.V.

USSR/Microbiology. Hemagglutinophilic Bacteria. Brucellae

F-5

Abs Jour : Ref Zhur - Biol., No 14, 1958, No 62454

Author : Pashkovskiy A.N., Povolotskaya G.V., Zinenko V.V.

Inst : State Scientific-Central Institute of Veterinary Preparations

Title : Studies of Brucella Antigens in the Reaction of Binding
Complements

Orig Pub : Tr. Gos. nauchno-kontrol'n. in-ta vet. preparatov, 1957, 7,
85-86

Abstract : No abstract

Card : 1/1

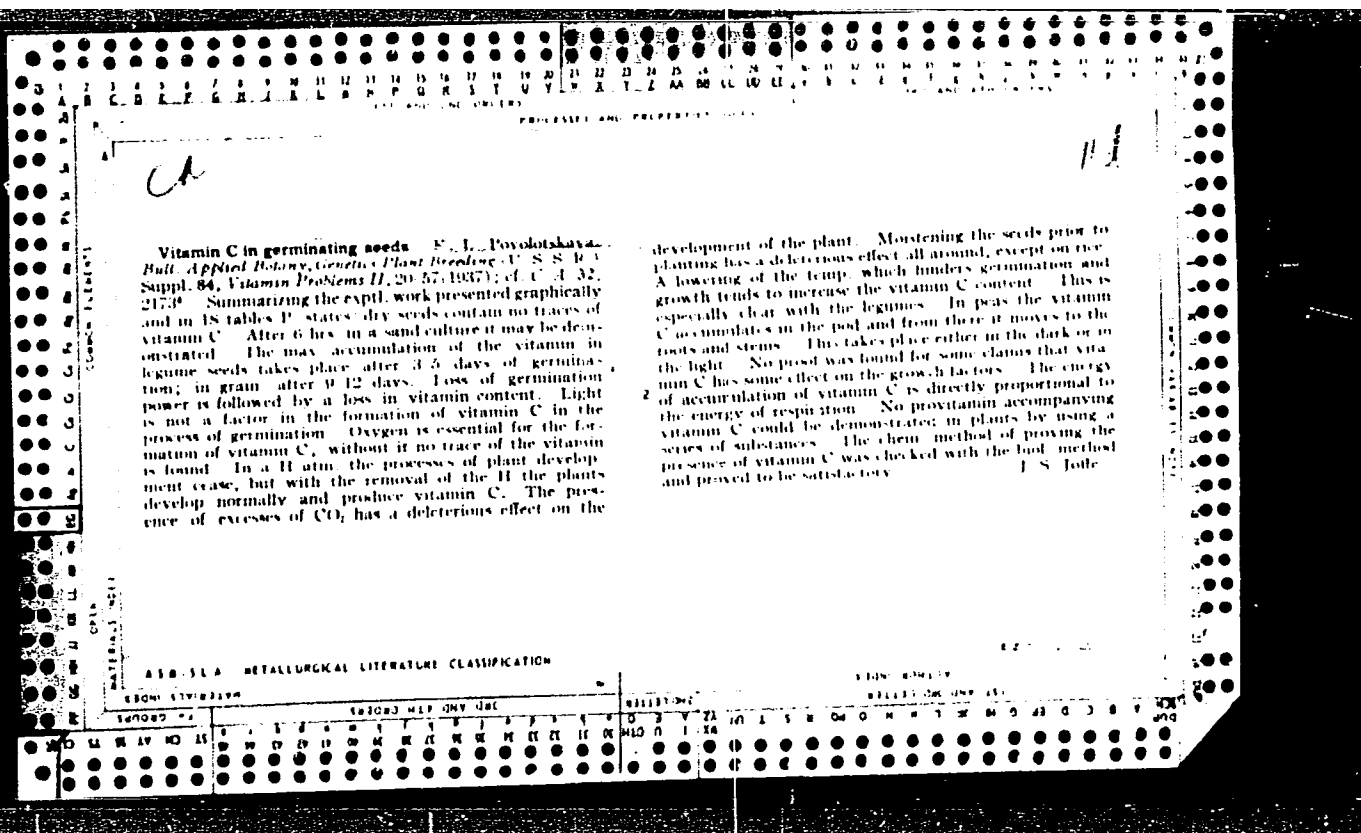
85

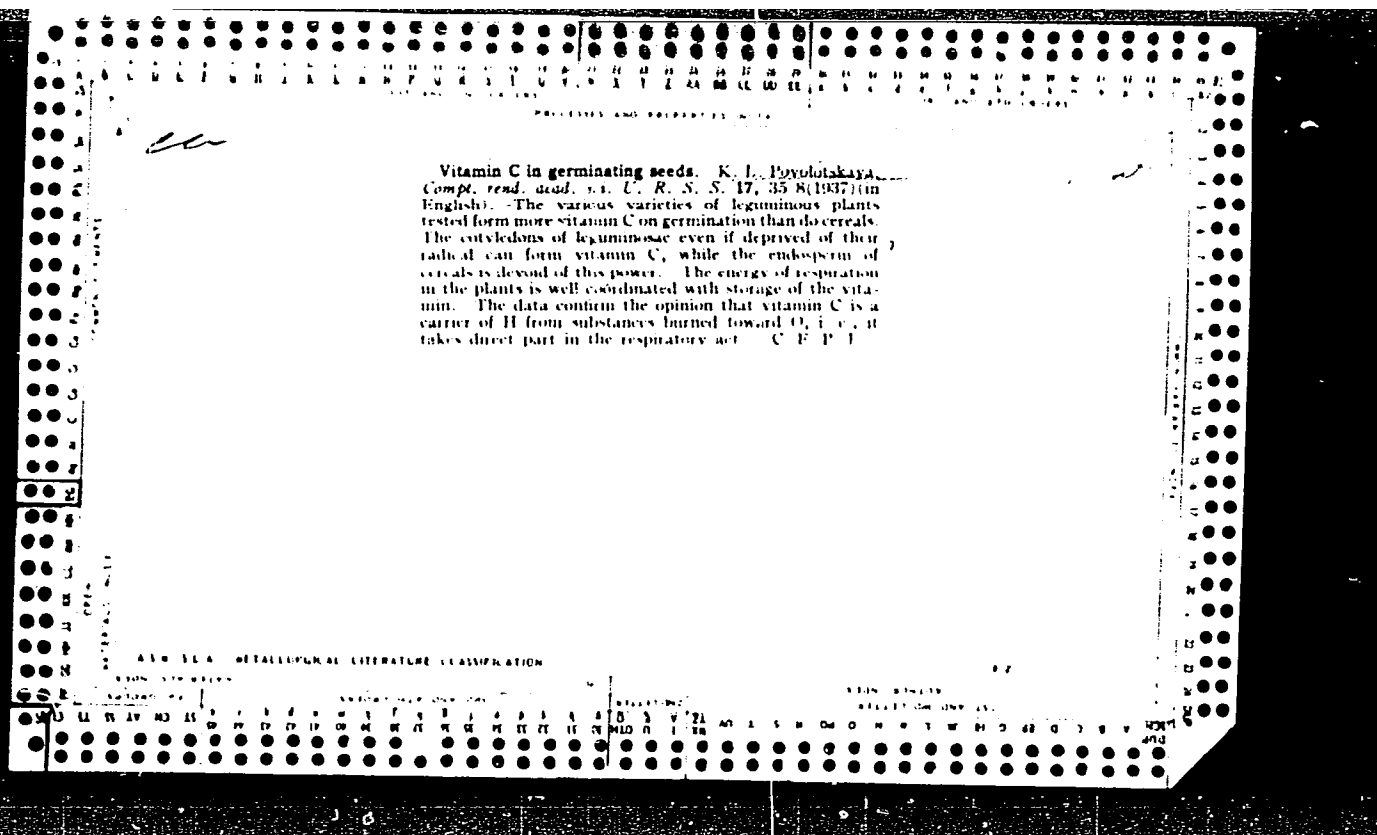
CA 11E

PROCESSES AND PROPERTIES INDEX

Therapeutic methods for assay of vitamin C. K. I. Poyolotskaya. *Bull. Applied Botany, Genetics Plant Breeding* (N. S. R.) Suppl. No. 67, 225-232 (1974); *Herz. Physiol. expil. Pharmacol.* 10, 316. Vitamin C assays require 80 to 100 days for prophylactic tests. Guinea pigs are given a modified Ikessonoff diet, supplemented by 0.5, 1 and 2 g. of rutabaga. After 16 days on a vitamin C-free diet, tests are started at various levels for 16 days, then animals are returned to a vitamin C-free diet for 16-day periods. Degrees of healing are detd. from changes in body wt., disappearance of clinical scorbutic swellings, histological appearances of the costochondral junctions, and of the teeth. In these tests 2 g. of rutabaga protected guinea pigs from scurvy. James C. Munch

ASAC SLA METALLURGICAL LITERATURE CLASSIFICATION





Antiscorbutic vitamin content in certain varieties of Michurin fruits V. A. Petrova, K. L. Povolotskaya and N. P. Onokhova. *Bull. Applied Botany, Genetic Plant Breeding* (U. S. S. R.) Suppl. 84, *Vitamin Problems* II, 112-9, 1955. The many varieties of the different fruits selected and bred by Michurin vary in their vitamin C content. Of the apples, Antonovka, Kulon, Kitauka, Chelbi Kitauka and Pomon Kitauka varieties are a good source of vitamin C. The pear Dosh Blank proved to be equal in its vitamin power to the apple Antonovka. The pear Bere was poor in vitamins. The cultivated mountain ash berries have a lower vitamin content than the wild growing varieties. The bird cherry has practically no vitamin. The Michurin plums contain very little vitamin. The *Achraja* berries have a high vitamin content. The wild rose, sweet briar or dog rose contain large quantities of vitamin C. L. S. Ioffe

115

The methods for vitamin B₁₂ determination in vegetable materials. K. L. Povolotskaya. *Biochemistry* 4, 327-33 (1969). The best method at present available is that of Emmerie (*C. A.* 30, 64037, 7194P), slightly modified by using 3 successive adsorptions on PbS and elution of each portion of the ppt. with 3 portions of aq. pyridine. H. Priestley

COMMON ELEMENTS

MATERIALS INDEX

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION

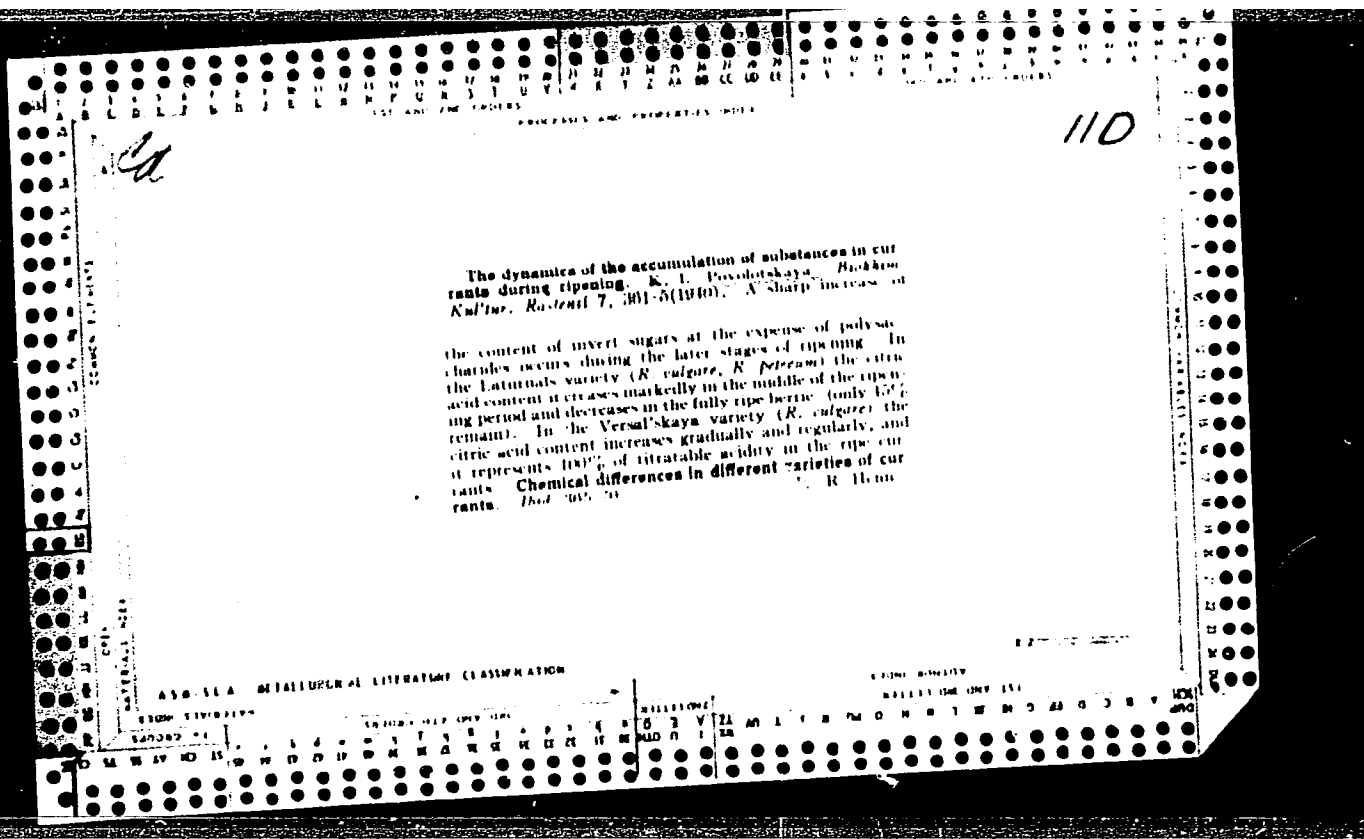
115

The chemical composition of raspberries. K. I. Savolodskaya. *Brokhim. Kul'tur. Razvit.* 7, 331-5 (1940).—Analyses are reported. The content of vitamin C was 9.1-36.0 in the 1936 crop and 9.2-83 mg per 100 g in the 1937 crop. **The accumulation of substances in raspberries during ripening.** *Ibid.* 335-6.—With ripening the content of the dry substance decreases, the acidity increases at first and then decreases gradually to the moment of full ripening and the sugar content increases. The fructose content is greater than that of glucose. **Changes in the chemical composition of raspberries, depending on the variety and the locality of growth.** *Ibid.* 336-42.—The sucrose content reaches 1.5-2.0% in the northern varieties, while only traces are found in the southern varieties. W. R. Henn

110

The chemical composition of red and black currants
Ribes rubrum and *Ribes nigrum*). K. L. Povolotskaya.
Biokhim. Kul'tur. Rasteni 7, 355-60(1960). Analyses
are reported. The content of vitamin C in black currants
is 100-400 and that in red currants 42-62 mg. per 100 g.
Black currants contain vitamin A 33 RE per 100 g. and
carotene 18.1 mg. per kg. Red currants contain no
carotene. Changes of the chemical composition of
currants under the influence of geographical factors,
fertilizers and other outside conditions. *Ibid.* 1961:1
W. R. Hunt

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



POVOLOTSKAYA, K.L.; BASKAKOV, Yu.A.; KHOVANSKAYA, I.V.

Interaction of uracil, riboflavin, and maleic hydrazide in plants. Fiziol.rast. 7 no.1:73-80 '60. (MIRA 13:5)

1. K.A.Timiriazev Institute of Plant Physiology, U.S.S.R.
Academy of Sciences, Moscow.
(MALEIC ACID) (URACIL) (RIBOFLAVIN)

POVOLOTSKAYA, K. L.

Pa 13T5

USSR/Medicine - Penicillium
Medicine - Vitaminology

Mar 1947

"Vitaminic and Enzymatic Properties of Mycelium of
Penicillium," K. L. Povolotskaya, E. P. Skorobogatova,
8 pp

"Biokhimiya" Vol XII, No 3

Study of the sterol content of the mycelium of
penicillium, and a method for the isolation of
ergosterol by direct extraction by dichloroethane
after preliminary autolysis.

13T5

POVOLOTSKAYA, K. L.

USSR/Medicine - Vitamins

Oct 50

"Biological Action of Tannin From Tea," A. L. Kursanov, V. I. Bukin, K. L. Povolotskaya, M. N. Zaprometov

"Biokhim Chaynogo Proizvod" Vol VI, pp 170-180 (Also published in "Biokhimiya")

Isolated mixt of catechins and their gallic acid esters (I), also l-epicatechin (II), from green leaves of Georgian tea. Isolated tannin mixt (III), similar to I from black tea. One mg of I, II, or III, injected intramuscularly into mice, increases considerably the strength of the animals' capillaries: There is reduction of hemorrhages in the lungs at lowered pressures. I is the most effective prepn. One mg of tea tannin per day, when added to the diet of guinea pigs, increases deposition of ascorbic acid in all organs and prevents scurvy. It follows that tea catechins have strong P(C₂) vitamin activity.

184T84

KURSANOV, V.N.; BUKIN, V.N.; POVOLOTSKAYA, K.L.; ZAPROMETOV, M.N.

Biologic function of tea tannin. Biokhimiia, Moskva 15 no.4:337-345
July-Aug 1950. (CIPL 20:7)

1. Institute of Biochemistry imeni A.N. Bakh, Academy of Sciences
USSR, Moscow. 2. Effect on capillaries.

CA

110

Biosynthesis of riboflavin in wounded plants. K. L. Povolotskaya and N. I. Zaitseva (All-Union Vitamin Research Inst., Moscow). *Doklady Akad. Nauk S.S.S.R.* 77, 317-20 (1961).—Cotyledons of the pea show some 250% increase of the rate of biosynthesis of riboflavin when they are crushed, in comparison with the intact plant. Similar increase occurs in a sliced potato tuber with most activity being centered at the surfaces of the cuts. Intact pea forms largely the bound form of riboflavin, while crushed pea shows increase of the free substance with decline of the bound form. The results with potato tubers are analogous. Biosynthesis of riboflavin in crushed pea parallels biosynthesis of ascorbic acid and the respiration rate; potato gives a similar picture but its thiamine gradually declines, while that in a pea rises. Light does not appear to affect riboflavin or ascorbic acid biosynthesis in these cases. Out or begonia leaves show a decline of riboflavin and ascorbic acid on incubation; results with cut cabbage leaves are similar, but a cut cabbage "heart" shows vigorous synthesis of both substances. G. M. Kozlovskoff

192

Povolotskaya, K. L.

AUTHORS:

Zaitseva, N. I. Povolotskaya, K. L.

20-2-38/60

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001342810001-1"

TITLE:

Riboflavin Released From Vegetable Proteins Isolated by 0,2% NaOH (Riboflavin, osvobozhdayemyy iz rastitel'nykh belkov, vydelennykh 0,2% NaOH)

PERIODICAL:

Doklady AN SSSR, 1958, Vol. 118, Nr 2, pp. 338 - 339 (USSR)

ABSTRACT:

Riboflavin closely combined with protein occurs in plant tissues in considerable quantities (reference 1). It is released in an alkaline medium (pH 7,8) by proteolysis. It was found that the quantity of the firmly bound form of riboflavin increases during the germination of seeds and the ripening of fruits and vegetables, whereas it decreases during the conservation of fruits and vegetables. In the isolation of this form of riboflavin from the protein-molecule riboflavin is separated as flavin-adenine-dinucleotide. It apparently forms the prosthetic group of those enzymes which are closely connected with the cellular structures (proofs see in references 3-5). Further investigations of the authors were directed to the determination of the distribution of the form of riboflavin which is closely connected with protein among the individual protein fractions. As test material they chose wheat flour which was successively extracted with distilled water, 5% NaCl,

Riboflavin Released From Vegetable Proteins Isolated by 0,2% NaOH ^{20-2-38/60}

0,2 % NaOH and 70 % ethyl alcohol. Riboflavin was determined in the extracts a) without proteolysis (the form hydrolyzable with acid) and b) with proteolysis (firmly bound form). From table 1 is to be seen that the largest quantity of riboflavin is contained in the alkali-soluble fraction. In the determination of riboflavin by the same methods but without fractionation a much smaller quantity was determined than after fractionation. These results indicate that much more riboflavin is contained in plants than could be determined by the methods hitherto applied. The optimum conditions of an alkaline extraction of riboflavin from wheat were also studied. These were : a 0,2% solution of NaOH at 0°C for 3 hours in darkness. The nature of the process of separation of riboflavin from protein is not yet clear, but an optimum pH (up to 8,0) must be preserved in this connection. The determined high contents of riboflavin in wheat induced the authors to carry out retests on a microbiological way. Riboflavin was destroyed in parallel extracts by ultraviolet radiation (for 3 hours) at pH 12. The results are given in table 2. They fully confirmed the results of the chemical analysis, as no riboflavin was found in the radiated extracts. Finally the authors fluorometrically determined riboflavin in peas, corn and sunflower seeds. Table 3 shows that by a treatment with alkalies it was possible to find much larger quantities of ribo-

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flavin in other plants, too, than it was possible by the methods hitherto used. All this opens up new ways of the investigation of riboflavin and causes a revision of the opinions on the content of riboflavin in its natural sources. There are 3 tables, and 5 references, 3 of which are Slavic.

ASSOCIATION: Institute for Biochemistry AN USSR imeni A. N. Bakh
(Institut biokhimii im. A. N. Bakha Akademii nauk SSSR)
Institute for Plant Physiology AN USSR imeni K. A. Timiryazev
(Institut fiziologii rasteniy im. K. A. Timiryazeva Akademii nauk SSSR)

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Card 3/3

POVOLOTSKAYA, K. L.

✓ Biosynthesis of thiamine, riboflavin, and nicotinic acid in seeds. K. L. Povolotskaya, O. I. Fyshkinskaya, A. A. Kondrashova, and E. P. Skorobogatova (A. N. Bakh Inst. Biochem., Moscow). *Biokhim. Zerna, Sbornik* 1953, No. 8, 145-55. — The addn. to the medium of thiamine, riboflavin, and nicotinic acid markedly increases the growth of sprouts of wheat and peas. Biotin, lysine, and methionine lower the energy of sprouting of the seeds and the growth of sprouts. The rate of biosynthesis of thiamine in sprouting seeds increases under the influence of riboflavin, nicotinic acid, and biotin; the rate of biosynthesis of riboflavin is accelerated by nicotinic acid and tryptophan. Thiamine, biotin, lysine, methionine, and tryptophan accelerate the biosynthesis of nicotinic acid. Solns. of oxythiamine and alloxan inhibit the growth of sprouts and lower the biosynthesis of riboflavin, and these substances could be considered as antivitamins in plants. I. A. Siskol

POVOLOTSKAYA, K.L.
RAKITIN, Yu.V.; POVOLOTSKAYA, K.L.

Fluorimetric determination of heteroauxin in plants [with summary in English]. Fiziol.rast. 4 no.3:285-292 My-Je '57. (MIRA 10:7)

1. Institut fiziologii rasteniy imeni K.A.Timiryazeva Akademii nauk SSSR, Moskva.
(Indoleacetic acid) (Fluorimetry) (Plants--Chemical analysis)

POVOLOTSKAYA, K.L.

✓ Preparation of riboflavin preparations from biological medium. K. L. Povolotskaya. Trudy, Vsesoyuz. Nauch. Issledovatel. Vtshim. Inst. 5, 88-95(1954).--Cryst. riboflavin is rapidly prepd. from natural soins. or culture.

media by reductive pptn. with $\text{Na}_2\text{S}_2\text{O}_4$ at a pH of about 5.8. For production, 1 pptn. is used and the residual riboflavin is adsorbed on ascanite. For lab. work, the treatment with hydrosulfite can be repeated. In these pptns. the ppt. is usually red-orange indicating the rhodoflavin form; on drying this turned green corresponding to chloroflavin or verdoflavin. The purity of the product is close to 100% as checked spectrometrically. G.M.K.

POVOLOTSKAYA, K. L.

USSR.

A biological method for the determination of riboflavin.
K. L. Povolotskaya and N. A. Vodolazskaya. *Trudy Vsesoyuz. Nauch.-Issledovatel. Vitamin. Inst.* 4, 131-7 (1953); cf. *C.A.* 49, 12573g. —Groups of young rats (30-40 g. each) of mixed sexes were fed the following riboflavin-free diet: riboflavin-free casein 25%; starch 61%; sunflower-seed oil 8%; fish oil 2%; Osborne and Mendel salt mixt. 4%, and 50 γ of mixt. of thiamine, pyridoxine, and Ca pantothenate. When symptoms of riboflavin avitaminosis appeared, the administration of increasing doses of riboflavin was initiated. The min. therapeutic dose was 8 γ per day. Bioassay results with synthetic and natural vitamins proved their identity. B. S. Levine

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Chemical and microbiological determinations of riboflavin in plant material. K. L. Povolotskaya and N. A. Vodolazskaya. *Trudy Vsesoyuz. Nauch.-Issledovatel. Vitolamin. Inst.* 4, 217-26(1953); cf. *C.A.* 47, 7679e; 49; 12632h. — Pretreatment of the plant material with clarase or polymase is an essential step in riboflavin (I) detn. Penicillinase was equally satisfactory. Treatment of the material with KMnO_4 is of value but in excess it causes partial decompn. of the vitamin. An excess of H_2O_2 in the elimination of the KMnO_4 must also be avoided. PbCl_2 and Na dithionite increase the I and clarify the ext. The following chem. method is proposed for the detn. of I in plant materials: grind 5-10 g. of test material in a small vol. of 0.1N H_2SO_4 ; wash into a 100-ml. flask with the H_2SO_4 to a vol. of 75 ml.; heat in boiling water bath for 45 min.; cool to 40° ; add satd. soln. AcONa to pH 4.5; add clarase or penicillinase at the rate of 0.03 g./g. of dry material; keep at 37° for 12-10 hrs.; bring vol. to 100 ml.; filter; take two 8-ml. aliquots; bring one to 10 ml. for the detn. of degree of fluorescence directly; to the other aliquot add 4% KMnO_4 until no color change (0.5-1.0 ml.); let stand for 10 min.; add 8% H_2O_2 , drop at a time, until pink color disappears; add 0.2 ml. 0.08% SnCl_2 and 0.1 ml. 2.5% Na dithionite; leucoriboflavine is formed; shake for 20 min.; bring vol. to 10 ml.; filter. Now, dissolve 10 mg. cryst. I in 250 ml. H_2O ; this standard stock soln. will keep in the dark for one month. Use 1 ml. of this stock + 0.9 ml. H_2O for standard of comparison. Det. degree of fluorescence of aliquots 1 and 2 and of standard; now, add to all 0.1 g. NaHCO_3 and

R. L. Probsthazy

0.1 g. Na dithionite. The fluorescence in the standard becomes extinguished, but not in the test aliquots. Det. degree of fluorescence in the latter. For calcn. of results use the following formula: $x = 0.4E(A - B)/CD$ where $x =$ I in $\gamma/g.$ of test material; $A =$ reading of fluorometer for test solns.; $B =$ fluorometer reading after the addn. of the $NaHCO_3$; $C =$ reading of fluorometer for standard; $0.4 =$ γ concn. of standard; $D =$ wt. in g.; $E =$ dila. in ml. The microbiol. method is based on the fact that *Lactobacillus casei* grows well only in a medium contg. 0.005-0.5 γ I per ml. of medium. The procedures for maintenance of *L. casei* and the method for I detn. are described. In this method a 48-hr. incubation period is recommended. Final results are obtained by titration of the formed lactic acid. In only a few plant materials does the microbiol. method yield higher results. Generally, the chem. and microbiol. methods give comparable results.

B. S. Levine

POVOLOTSKAYA, K.L.; SKOROBGATOVA, E.P.

Comparison of the chemical and microbiological methods for riboflavin
in plant materials. Biokhimiya 18, 79-88 '53. (MLRA 6:1)
(CA 47 no.15:7579 '53)

1. All-Union Vitamin Inst. , Moscow.

NIKOLAYEV, R.P.; POVOLOTSKAYA, K.L.; VODOLAZSKAYA, N.A.

Biological value of different concentrates and preparations of vitamin
C. Biokhimiya 18, 169-74 '53. (MIRA 6:4)
(CA 47 no.17:8855 '53)

1. Vitamin Inst., Moscow.

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(2)
Concerning a new form of protein-bound riboflavin.
K. L. Povolotskaya (K. N. Bakh Inst. Biochem., Acad.
Sci. U.S.S.R., Moscow). *Biokhimiya* 18, 638-43 (1953).
There exists a heretofore unknown protein-bound riboflavin,
which can be split by proteolytic enzymes of the type of
trypsin. It cannot be demonstrated by the usual chem.
and microbiol. methods of riboflavin detn. It is widely
distributed in nature and is quantitatively equal to the sum
of the three riboflavins known before. B. S. Levine

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✓ Vitamins B₁, B₂, and PP in grain and products of its treatment. K. L. Povolotskaya, A. A. Kondrasheva, O. I. Pushkinskaya, and E. P. Skorobogatova (A. N. Bakh Inst. Biochem., Acad. Sci. U.S.S.R., Moscow). *Biokhim. Zhurn.*, Akad. Nauk S.S.S.R., *Sbornik* 2, 179-92 (1954).— Vitamin detms. were made on specimens of grain from wheat, rye, barley, corn, buckwheat, peas, soybeans, sunflower, lentil, and cotton. The highest content of thiamine is in sunflower seed (24 mg./kg.), of riboflavin in soybean (2.16), and nicotinic acid in sunflower (58.6), and wheat (51-60), as well as barley (87). The loss of the B vitamins in treatment of the grain varies with the techniques employed; the removal of the seed covers during milling reflects the vitamin content of the flour but little. G. M. K.